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ABSTRACT

Designed for use with thirty-five technical specialty courses included in the Nuclear Technology Series, this master index merges all index entries from the thirty-five courses. The index lists for each entry the course and module numbers (underlined), followed by the page number. Figures and tables, when included, are listed by their numbers, followed by the module and page number in parentheses. (LRA)

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ED192162

Nuclear Technology Series

MASTER INDEX

TO ALL 35 COURSES
OF THE
NUCLEAR TECHNOLOGY SERIES

CENTER FOR OCCUPATIONAL RESEARCH
AND DEVELOPMENT
4800 LAKEWOOD DRIVE
WACO, TEXAS
76710

CE 026 856

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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The Nuclear Technology Series consists of five curricula:

Nuclear Reactor (Plant) Operator Trainee.
Radiation Protection Technician.
Nuclear Materials Processing Technician.
Nuclear Quality-Assurance/Quality-Control Technician.
Nuclear Instrumentation and Control Technician.

The completed Nuclear Technology Series consists of the following 35 technical specialty courses:

Radiation Physics.
Radiation Protection I.
Principles of Process Instrumentation.
Heat Transfer and Fluid Flow.
Introduction to Nuclear Systems.
Instrumentation and Control of Reactors and Plant Systems.
Reactor Operations.
Reactor Safety.
Reactor Auxiliary Systems.
Power Plant Systems.
Radiation Detection and Measurement.
Reactor Physics.
Power Plant Chemistry.
Introduction to Quality Assurance/Quality Control.
Metallurgy and Metals Properties.
Mechanical Component Characteristics and Specifications.
Radiation Protection II.
Radiological Emergencies.
Radiation Shielding.
Radiation Monitoring Techniques (Radiochemical).
Radioactive Materials Disposal and Management.
Advanced Radionuclide Analysis.
Nuclear Chemical Processes.
Nuclear Systems and Safety.
Radioactive Material Handling Techniques.
Nondestructive Examination (NDE) Techniques I.
Metrology.
Welding Inspection.
Civil/Structural Inspection.
Mechanical Inspection.
Quality-Assurance Practices.
Nondestructive Examination (NDE) Techniques II.
Control Systems I.
Control Systems II.
Power Plant Electrical Systems and Components.

Availability: Instructional modules are available individually or by courses from:

Center for Occupational Research and Development
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INTRODUCTION

In order to meet the growing demand for energy in the United States, a combination of energy sources must be utilized to generate an adequate supply of electrical power. One of those sources is nuclear-generated electrical power. In spite of several uncertainties in the nuclear industry, the demand for nuclear technicians has increased due to the national effort to develop nuclear-generated electrical power. To build and operate nuclear power plants safely, efficiently, and economically requires technicians especially trained and qualified. To use the nuclear energy resource with assurance to the public, plants have to be operated safely with a minimum risk to human life and environmental quality, and techniques must be demonstrated for safe and reliable reprocessing and storage of spent fuel.

In 1974, what is now the U.S. Department of Education, Office of Vocational and Adult Education, began funding a series of projects to identify categories of nuclear technicians; to design appropriate training curricula to be used by two-year, postsecondary institutions; to develop and test instructional materials for all nuclear technical specialty courses in the curricula; and to disseminate the materials and programs for use in institutional and employer training of nuclear technicians. In the summer of 1980, the final curriculum development project was completed, the entire effort producing 247 instructional modules for 35 technical specialty courses — over 8000 pages of instructional materials.

Although each course contains an Index, the Master Index to all 35 courses is of great importance in making readily available all data within the 8000 pages. Without

this Master Index, all references to a topic could not be determined without searching all 35 course indexes.

As a direct consequence of recent experiences (e.g., Three Mile Island), training for nuclear power plant operators and technicians is becoming much more stringent, as well as more formalized and sophisticated. The USOE-sponsored Nuclear Technology Series, because of these new developments, bodes to become a major tool in this intensified training requirement. The great importance of the Series in pre-employment and post-employment training programs suggests the need for maximum utility – the intent of this Index.

The Master Index can accomplish the following tasks, among others:

- Facilitate inclusion of Nuclear Technology Series courses and modules into access-and-retrieval systems, such as ERIC.
- Simplify module selection for specialized curricula formulation. A curriculum designer quickly could identify and review specific content.
- Aid instructors and students to access the Nuclear Technology Series for specific study and definitions during the conduct of the course and after employment.
- Enable the Nuclear Technology Series to be used by technical organizations and libraries as valuable resource and reference documents.

Table 1 lists the 35 nuclear courses, identifies which courses are suggested for use in the five technologies of the Nuclear Series, and indicates the school quarter in which they normally are taught. Suggested Program Planning Guides for the five nuclear technologies are available from CORD.

TABLE 1. NUCLEAR TECHNOLOGY SERIES COURSES.

COURSE NO.	TECHNICAL COURSE TITLE	NUMBER OF MODULES	NUCLEAR REACTOR (PLANT) OPERATOR TRAINEE	RADIATION PROTECTION TECHNICIAN	NUCLEAR MATERIALS PROCESSING TECHNICIAN	NUCLEAR QUALITY – ASSURANCE/QUALITY – CONTROL TECHNICIAN	NUCLEAR INSTRUMENTATION AND CONTROL TECHNICIAN
1	Radiation Physics	6	1	1	1	1	1
2	Radiation Protection I	9	2	2	2	2	2
3	Principles of Process Instrumentation	9	3		3	3	3
4	Heat Transfer and Fluid Flow	9*	3				4
5	Introduction to Nuclear Systems	9	4	3		4	4
6	Instrumentation and Control of Reactors and Plant Systems	6	5				5
7	Reactor Operations	7	6				
8	Reactor Safety	5	5				
9	Reactor Auxiliary Systems	4	4				
10	Power Plant Systems	9	5				
11	Radiation Detection and Measurement	9	2	2	2	2	2
12	Reactor Physics	8	4				4
13	Power Plant Chemistry	7	5	4			
14	Introduction to Quality-Assurance/ Quality-Control	9	3	3	3	3	3
15	Metallurgy and Metals Properties	8	3		4	3	
16	Mechanical Component Characteristics and Specifications	8	4			4	
17	Radiation Protection II	9		6	4		
18	Radiological Emergencies	7		4		*	
19	Radiation Shielding	6		5			
20	Radiation Monitoring Techniques	7		5	5		
21	Radioactive Materials Disposal and Management	7		5		*	
22	Advanced Radionuclide Analysis	7		5			
23	Nuclear Chemical Processes	7			5		
24	Nuclear Systems and Safety	6**			6		
25	Radioactive Material Handling Techniques	8***			6		
26	Nondestructive Examination (NDE) Techniques I	7				4	
27	Metrology	8			3	3	
28	Welding Inspection	11				5	
29	Civil Structural Inspection	6				5	
30	Mechanical Inspection	9				5	
31	Quality Assurance Practices	8				6	
32	Nondestructive Examination (NDE) Techniques II	6				5	
33	Control Systems I	6					5
34	Control Systems II	7					6
35	Power Plant Electrical Systems and Components	7					6

*Course 4 modified for I&C only. **Module 24.1 = 12.1; 24.2 = 12.2; 24.3 = 12.3. *** Module 25.6 = 21.1; 25.7 = 21.6; 25.8 = 21.4.

NOTE: Numbers in columns denote suggested hours for use of the course.

NUCLEAR TECHNOLOGY SERIES

MASTER INDEX

for

ALL 35 NUCLEAR COURSES

NOTE: Each module in the 35 courses is numbered separately, and the page numbers begin with page 1 in each module. Therefore, this Index lists for each entry the course and module numbers (underlined), followed by a comma and the page number. Figures and tables, when included, are listed by their numbers, followed by the module and page number in parentheses. This Master Index merges all index entries from the 35 Nuclear Courses. It is a valuable research tool, with which the student or researcher can locate all the references to any subject within the 35 Courses.

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